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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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S EXC-0001

023413
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QM01/0622

EXAMINER

ART UNIT	PAPER NUMBER
JEFFERY, I	

3742

DATE MAILED:

06/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/679096

Applicant(s)

Aisenberg et al

Examiner

Jeffery

Group Art Unit

3742

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-28 is/are pending in the application.
- ☐ Of the above claim(s) 18-26 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-17, 27, & 28 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Applicant Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 10/4/00 is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 5
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Restriction to one of the following inventions is required under 35 USC 121:

- I. Claims 1-17, 27, and 28, drawn to a dryer, classified in Class 392, subclass 380.
- II. Claims 18-26, drawn to a method of operating a dryer, classified in Class 34, subclass 426.

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process such as a wide variety of drying processes running the fan at the same speed, not necessarily at different speeds as is claimed in the broadest method claim.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

During a telephone conversation with David Fox on 6/18/01 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-17, 27, and 28. Affirmation of this election must be made by applicant in responding to this Office action. Claims 18-26 are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Dryer With Outlet Having Perimeter to Area Ratio Greater Than 2.5."

The Abstract of the Disclosure is objected to because of the following informalities:

In line 1, "An exemplary embodiment of the invention is a dryer that" must be changed to "[A] dryer" for brevity.

Correction is required. See MPEP 608.01(b).

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, (1) the proximity sensor as claimed in claim 13, and (2) the surge suppressor in series with the brush motor as claimed in claim 17 must be shown or the features should be cancelled from the claims. Applicant is reminded to amend the specification accordingly in conjunction with the drawing change. No new matter should be entered.

The response to this action must include a separate letter addressed to the examiner and contain: (1) sketches showing in red the drawing changes required above and (2) a request that the examiner approve the changes as shown on the sketches.

IMPORTANT NOTE: The filing of new formal drawings to correct the noted defect may be deferred until the application is allowed by the examiner, but the print or pen-and-ink sketches with proposed corrections in red ink is required in response to this office action, and may not be deferred.

Claims 14 is objected to because of the following informalities:

The term "after" must be changed to "downstream from" for clarity.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 14, and 27 are rejected under 35 USC 102(b) as being anticipated by Iyer (US5526578). Iyer (US5526578) discloses a dryer comprising a blower 15, heater 16 downstream therefrom, and outlets 19 having an external diameter with a lower limit of 0.7 cm. See Figs. 5-7 and Col. 8, lines 29-43. According to the instant specification, the perimeter to area (P/A) ratio is determined from the formula as given on Page 9, line 10. Since there are common terms in both the numerator and denominator, the given formula can be simplified to the following formula: $P/A = 2/r$. In Iyer (US5526578), the recited diameter of 0.7 cm translates to a P/A value of 5.714 thus falling within the claimed P/A range. With regard to claim 27, the scope and breadth

of the claim language did not preclude the "channel" formed by housing structure 9 and 7 (see Fig. 7).d

Claim 28 is rejected under 35 USC 102(b) as being anticipated by WO94/23611 or WO83/02753 or JP4-367609. See Fig. 2 of WO94/23611. Note "inner air outlet" 48 and "outer air outlet" 38. A first airflow is within inner nozzle and heated via heater 52 and a second airflow passes between the inner and outer nozzle to cool the same. See Page 3, last paragraph. Also, see Fig. 1 and 2 of JP4-367609.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-9, 13, 14, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbertson (US4634839) in view of Sheridan (US4349725). Gilbertson (US4634839) discloses an electrically heated dryer with a blower for directing air via cylindrical nozzle 34 to small areas such as a tooth to be dried in dentistry. See Col. 1, lines 5-15. Gilbertson (US4634839) discloses all of the structure claimed except for the air outlet to have specifically a P/A ratio greater than 2.5. According to the instant specification, the P/A ratio is determined from the formula as given on Page 9, line 10. Since there are common terms in both the numerator and denominator, the given formula can be simplified to the following formula: $P/A = 2/r$. Thus, the P/A ratio is merely dependent upon the choice of the value of the radius (or diameter) of the outlet. While the specific diameter dimensions of the outlet are not disclosed by Gilbertson

(US4634839), outlet sizes in heated air drying apparatus are typically chosen dependent upon the size of workpiece to be dried. Accordingly, the outlet size is so chosen to substantially match the workpiece size. Such an outlet size choice is explained in Sheridan (US4349725) in Col. 3, lines 13-24 wherein the size of the outlet of a directed air heater for dental purposes is varied depending upon the size of the work to be heated (i.e., a single tooth, or multiple teeth). Furthermore, in view of the relatively small size of teeth (i.e., on the order of tenths of an inch), the corresponding outlet size substantially matching the tooth size would yield outlet P/A ratios in the claimed range. Thus, in view of Sheridan (US4349725), it would have been obvious to one of ordinary skill in the art to select an outlet size for a given size tooth, and therefore with a dimension yielding the claimed P/A range, so that heated air issuing from the device is localized on the tooth to be dried thereby minimizing undesired collateral heated air contact with other teeth. With regard to claim 13, proximity switches for activating heated air blowers are conventional and well known in the art to automatically turn on/off the blower responsive to presence of the user and their use does not constitute a patentably distinguishable characteristic of the invention.

Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer (US5526578) in view of Tomaro (US4327278). The claims differ from the previously cited prior art in calling for the blower to generate an air velocity of no less than 18,000 fpm. According to the instant specification on Page 17, lines 10-15, to achieve such an airflow rate, a motor that operates at greater than 15,000 rpm must be used. While the specific air velocity of the blower of the previously described apparatus is not recited, providing blowers which operate in excess of 15,000 rpm in electrically heated hair dryers is conventional and well known in the art as evidenced by Tomaro (US4327278) noting Col. 2, lines 55-57 wherein a blower motor with a loaded speed of 19,000 rpm is disclosed. In view of Tomaro (US4327278), it would have been obvious to one of ordinary skill in the art to utilize a blower motor in excess of 15,000 rpm in the previously described apparatus in order to increase the rotational rate of the blower thereby increase the heated airflow issuing therefrom. With regard to claim 13, proximity switches for activating heated air blowers are conventional and well known in the art to automatically turn on/off the blower responsive to presence of the user and their use does not constitute a patentably distinguishable characteristic of the invention.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer (US5526578) in view of Hersh et al (US4596921). The claims differ from the previously cited prior art in calling for sound absorbing material positioned in a cavity. Providing sound absorbing material in an electrically heated air blower to attenuate fan noise is conventional and well known in the art as evidenced by Hersh et al (US4596921) noting material 23 in Fig. 2 and Col. 3, lines 1-35. In view of Hersh et al (US4596921), it would have been obvious to one of ordinary skill in the art to provide sound absorbing material in the previously described apparatus so that

excessive noise generated by the fan is attenuated. With regard to claim 12, the sound absorbing material of Hersh et al (US4596921) is disposed in a "cavity" and would inherently generate reflections from sound waves contacting the material.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer (US5526578) in view of Bergeron (US2478559). The claims differ from the previously cited prior art in calling for a brushless and a brush-type motor. Providing a brush-type motor in an electrically heated air dryer is conventional and well known in the art as evidenced by Bergeron (US2478559) noting commutator motor with brushes 16. In view of Bergeron (US2478559), it would have been obvious to one of ordinary skill in the art to provide a commutator motor (i.e., a brush type motor) in the previously described apparatus so that a small high-speed motor was utilized to power the fan. With regard to claim 15, brushless motors are well known in the art, conventionally used for the same purpose, and do not constitute a patentably distinguishable characteristic of the invention.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer (US5526578) in view of Bergeron (US2478559) and further in view of JP5-91755. The claims differ from the previously cited prior art in calling for a surge suppressor in series with the brush motor. The use of surge suppressors in conjunction with commutator motors in blowers is conventional and well known in the art as evidenced by JP5-91755 noting surge suppressor 1 comprising a filter circuit which is connected to the motor. See Abstract. While the filter is connected in parallel to the motor, no criticality is seen with respect to a series connection versus a parallel connection and the choice of either a series or parallel circuit connection would have been within the level of one of ordinary skill in the art in view of impedance matching, loading, and other electrical design considerations. In view of JP5-91755, it would have been obvious to one of ordinary skill in the art to provide a surge suppressor connected to the commutator motor of the previously described apparatus so that current surges are attenuated upon startup of the motor thereby prolonging brush life.

Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbertson (US4634839) in view of Sheridan (US4349725) and further in view of Tomaro (US4327278). The claims differ from the previously cited prior art in calling for the blower to generate an air velocity of no less than 18,000 fpm. According to the instant specification on Page 17, lines 10-15, to achieve such an airflow rate, a motor that operates at greater than 15,000 rpm must be used. While the specific air velocity of the blower of the previously described apparatus is not recited, providing blowers which operate in excess of 15,000 rpm in electrically heated hair dryers is conventional and well known in the art as evidenced by Tomaro (US4327278) noting Col. 2, lines 55-57 wherein a blower motor with a loaded speed of 19,000 rpm is disclosed. In view of Tomaro (US4327278), it would have been obvious to one of ordinary skill in the art

to utilize a blower motor in excess of 15,000 rpm in the previously described apparatus in order to increase the rotational rate of the blower thereby increase the heated airflow issuing therefrom. With regard to claim 13, proximity switches for activating heated air blowers are conventional and well known in the art to automatically turn on/off the blower responsive to presence of the user and their use does not constitute a patentably distinguishable characteristic of the invention.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbertson (US4634839) in view of Sheridan (US4349725) and further in view of Hersh et al (US4596921). The claims differ from the previously cited prior art in calling for sound absorbing material positioned in a cavity. Providing sound absorbing material in an electrically heated air blower to attenuate fan noise is conventional and well known in the art as evidenced by Hersh et al (US4596921) noting material 23 in Fig. 2 and Col. 3, lines 1-35. In view of Hersh et al (US4596921), it would have been obvious to one of ordinary skill in the art to provide sound absorbing material in the previously described apparatus so that excessive noise generated by the fan is attenuated. With regard to claim 12, the sound absorbing material of Hersh et al (US4596921) is disposed in a "cavity" and would inherently generate reflections from sound waves contacting the material.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbertson (US4634839) in view of Sheridan (US4349725) and further in view of Bergeron (US2478559). The claims differ from the previously cited prior art in calling for a brushless and a brush-type motor. Providing a brush-type motor in an electrically heated air dryer is conventional and well known in the art as evidenced by Bergeron (US2478559) noting commutator motor with brushes 16. In view of Bergeron (US2478559), it would have been obvious to one of ordinary skill in the art to provide a commutator motor (i.e., a brush type motor) in the previously described apparatus so that a small high-speed motor was utilized to power the fan. With regard to claim 15, brushless motors are well known in the art, conventionally used for the same purpose, and do not constitute a patentably distinguishable characteristic of the invention.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbertson (US4634839) in view of Sheridan (US4349725), Bergeron (US2478559), and further in view of JP5-91755. The claims differ from the previously cited prior art in calling for a surge suppressor in series with the brush motor. The use of surge suppressors in conjunction with commutator motors in blowers is conventional and well known in the art as evidenced by JP5-91755 noting surge suppressor 1 comprising a filter circuit which is connected to the motor. See Abstract. While the filter is connected in parallel to the motor, no criticality is seen with respect to a series connection versus a parallel connection and the choice of either a series or parallel circuit connection would have been within the level of one of ordinary skill in the art in view of impedance matching,


loading, and other electrical design considerations. In view of JP5-91755, it would have been obvious to one of ordinary skill in the art to provide a surge suppressor connected to the commutator motor of the previously described apparatus so that current surges are attenuated upon startup of the motor thereby prolonging brush life.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The art should be both separately considered and considered in conjunction with the previously cited prior art when responding to this action.

JP 915, GB 838, US 620, US 211, US 034 disclose dryers relevant to the instant invention. DE 222 (Fig. 1), US 554, US 824 disclose concentric nozzle structures in air blowers relevant to the instant invention. JP 839 discloses adjusting the outlet size of a dryer to adjust airflow rate. US 542, and US 552 disclose the use of high speed vacuum motors in drying applications using electric heaters.

Any inquiry concerning this or earlier communications from the examiner should be directed to John A. Jeffery at telephone number (703) 306-4601 or fax (703) 305-3463. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM EST. The examiner can also be reached on alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.


JOHN A. JEFFERY
PRIMARY EXAMINER

6/19/01